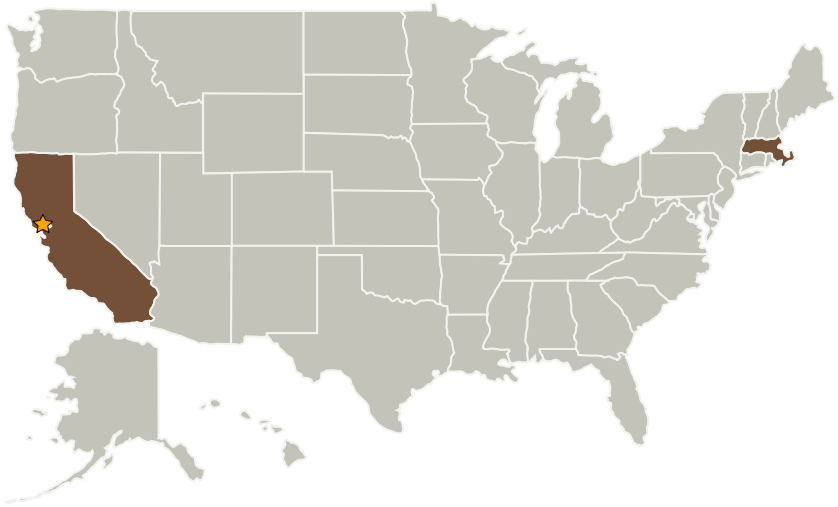
Open System of Agile Ground Stations, Phase II

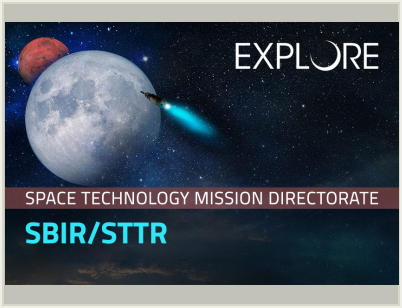
Completed Technology Project (2009 - 2011)

Project Introduction

The Phase I effort demonstrated, through actual development and tests with a spacecraft system, the technical and programmatic feasibility of developing, within the SBIR phase II program, the prototype of an innovative and low-cost Open System of Agile Ground Stations using the new commercial Software Defined Radio (SDR) technology. The prototype agile stations will operate in a wide band used by NASA and other science and technology satellites and will be able to switch between communications frequencies, modes and data protocols, in real time, to service multiple satellites. The stations will be remotely programmable to store portfolios of satellite applications, and will switch between applications on demand from the largely automatized Ground Station Management and Maintenance Center (GSMMC). Multiple station sites will provide a high level of back-up capability and link opportunities at up to 3.5Mbits/s and will eliminate down-times. The GSMMC will interface with the different satellite Mission Operation Centers, and oversee the scheduling and programming of the station system. The prototype system will be implemented on the existing HETE-2 network of three stations, opening that system to service multiple missions at very low cost, while significantly enhancing its capabilities and performance.

Primary U.S. Work Locations and Key Partners





Open System of Agile Ground Stations, Phase II

Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Open System of Agile Ground Stations, Phase II

Completed Technology Project (2009 - 2011)

Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Espace Inc.	Supporting Organization	Industry	Hull, Massachusetts

Primary U.S. Work Locations	
California	Massachusetts

Project Transitions

September 2009: Project Start

March 2011: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.4 Network Provided Position, Navigation, and Timing
    - TX05.4.2 Revolutionary Position, Navigation, and Timing Technologies